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REPRINT

Towards Monetary Integration in Europe

by
F. van der Ploeg

Reprinted from De Europese Monetaire Integratie: vier visies, Wetenschappelijke Raad voor het Regeringsbeleid V 66, 's-Gravenhage: SDU uitgeverij, 1989

TILBURG UNIVERSITY

Reprint Series
no. 12

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CentER for Economic Research

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Voorstudies en achtergronden

De Europese Monetaire Integratie: vier visies

V66

1989

P. De Grauwe

A. Knoester
A. Kolodziejak
A. Muijzers

F. van der Ploeg

C. J. Rijnvos

SDU uitgeverij, 's-Gravenhage 1989

Wetenschappelijke Raad voor het Regeringsbeleid

Ten geleide

In de reactie op het rapport De onvoltooide Europese integratie (Rapporten aan de Regering, nr. 28, 1986) heeft de regering de WRR verzocht aandacht te besteden aan het proces van macro-economische en monetaire integratie in de Gemeenschap en aan de financiering van de Gemeenschap. Over het laatstgenoemde onderwerp heeft de raad eind 1987 een interim-advies uitgebracht (*De financiering van de Europese Gemeenschap*; Rapporten aan de Regering nr. 32, 1987).

Ter ondersteuning van zijn onderzoek heeft de raad enkele deskundigen gevraagd hun visie op het economische integratieproces in Europa in een preadvies te beschrijven.
Omdat ten aanzien van de relatie tussen macro-economische en monetaire integratie verschillende opvattingen en standpunten bestaan, legde de raad aan de preadviseurs de vraag voor, deze relaties te willen beschrijven. Ter structurering van de analyse werd voorgesteld uit te gaan van vier stadia in het monetaire integratieproces waarin de wisselkoersen respectievelijk flexibel, stabiel of vast zijn en het laatste stadium, waarin één Europese munt als gemeenschappelijke geldeenheid is gecreëerd. Het accent zou moeten liggen op de tweede en derde fase, respectievelijk de huidige fase en een stapje verder. Voor elke fase zou moeten worden aangegeven op welke terreinen samenwerking tussen de lidstaten of coördinatie van beleid noodzakelijk is en in hoeverre een nationaal conjunctuur- en structuurbeleid nog effectief kan zijn.

De vier preadviseurs zijn:
- prof.dr. P. de Grauwe, hoogleraar aan het Centrum voor Economische Studiën aan de Katholieke Universiteit Leuven;
- prof.dr. A. Knoester, hoogleraar economie aan de faculteit der beleidswetenschappen van de Katholieke Universiteit Nijmegen. Knoester heeft het advies geschreven in samenwerking met drs. A. Kolodziejak, docent economie aan dezelfde faculteit, en drs. A. Muijzers, politicoloog;
- prof.dr. F. van der Ploeg, hoogleraar economie aan het CentER for Economic Research van de Katholieke Universiteit Brabant;
- prof.dr. C.J. Rijnvos, hoogleraar economie aan de juridische faculteit van de Erasmus Universiteit Rotterdam en lid van de Wetenschappelijke Raad voor het Regeringsbeleid.

De preadviezen werden in maart en april van dit jaar afgerond [1].

Nadat de raad had besloten tot publikatie van de preadviezen verscheen het rapport van de Commissie-Delors. Deze commissie, bestaande uit de presidenten van de centrale banken in de Europese Gemeenschap en aangevuld met enkele deskundigen onder voorzitterschap van de voorzitter van de Europese Commissie, werd tijdens de Top in Hannover in juni 1988 ingesteld. De opdracht was de voortgang naar een economische en monetaire unie te bestuderen en concrete stappen voor te stellen op weg naar een dergelijke unie.

[1] De in deze bundel gepubliceerde preadviezen van prof.dr. A. Knoester c.s. en van prof.dr. F. van der Ploeg zijn samenvattingen. De uitgebreide, meer technische versies zijn beschikbaar als WRR-werkdocument respectievelijk nrs. W43 en W42.

Het verschijnen van het rapport van de Commissie-Delors kan een nieuwe fase inluiden voor het integratieproces binnen de Europese Gemeenschap. De raad heeft daarom een van zijn leden, deskundig op internationaal monetair terrein en tevens een van de preadviseurs, prof.dr. C.J. Rijnvos, gevraagd bij wijze van nabeschouwing zijn persoonlijke mening over het rapport van de Commissie-Delors te willen geven. Deze nabeschouwing vindt u onder de titel 'Perspectief voor de Europese Gemeenschap' achter in deze bundel.

Prof.dr. W. Albeda
Voorzitter

Inhoudsopgave

Towards monetary integration in Europe

F. van der Ploeg

Contents

3.1 Introduction

The problems of macro-economic policy coordination and monetary integration have become a major concern for the European economies in recent years and years to come. The late seventies have seen the advent of the European Monetary System, which has been reasonably successful in achieving convergence to low inflation rates throughout Europe. However, many commentators have expressed concern about the relative tight fiscal stance in Europe and the relatively loose fiscal stance in the United States during the eighties. This has been very bad for European unemployment and it is important to understand why European governments have been so reluctant to expand demand and fight unemployment. Partially, this is due to the lack of effective policy coordination between Europe and the United States, especially when one takes account of the oil-price shocks hitting Europe much harder than the United States and of the high degree of wage indexation in Europe (e.g., Branson and Rotemberg, 1980; Bruno and Sachs, 1985; Van der Ploeg, 1987a). However, one could seriously ask whether the European Monetary System itself imparts a deflationary bias in the fiscal stance of European governments. Since Germany plays such an important role in the European Monetary System in the sense that it has an independent monetary policy whilst the other European governments peg their currency to the Deutschmark, one can ask whether this German hegemony in monetary policy implies that Germany is less concerned about increasing its fiscal stance in the face of unemployment than the rest of Europe. Germany may have an incentive to gain competitiveness at the expense of the rest of Europe by having a tighter fiscal stance than the rest of Europe and benefitting from the looser fiscal stances elsewhere. This seems to be, apart from the prestige and implied autonomy, the main benefit of the European Monetary System for Germany. The main benefit for the rest of Europe may be that by pegging their exchange rate to the Deutschmark, they gain the credibility of the Bundesbank and thus obtain low inflation. Dornbusch (1987) argued that attempts to fix nominal exchange rates in Europe are not a good idea; instead a 'crawling peg' to allow for inflation differentials between northern Europe and southern Europe seems desirable.

Nevertheless, there is much discussion in the press and business community on the desirability and feasibility of establishing a European Central Bank and one European currency. The Delors committee is investigating these issues and will soon report on the desirability of a European Central Bank. Such a trend towards monetary integration need not imply that national currencies would disappear altogether, because they could co-exist with the new European currency. Many countries, especially Italy, have warned that they do not want a European Central Bank to be a larger version of the Bundesbank. In other words, a European Central Bank must operate as a symmetric exchange rate system with all countries having a say on how European monetary policy is set. This is quite unlike the European Monetary System, which so far has operated as an asymmetric exchange rate system with German hegemony. Important policy questions are what monetary unification in Europe implies for fiscal policy. Do the gains arising from exchange rate stability, from a common currency and from increased credibility outweigh any possible losses from macro-economic inefficiencies? There is not only monetary integration but also integration of markets for goods and factors in Europe and it is important to know the implications for fiscal and monetary policies. More generally, important policy questions are:

(i) Does increased monetary integration in Europe imply more or less need for European coordination of macro-economic policies?

(ii) What are the implications of monetary integration for the effectiveness of monetary and fiscal policies?

(iii) What institutions are needed to guarantee the coordination of monetary and fiscal policies?

(iv) What are the implications of the completion of a European Common Market ('1992') for coordination and/or convergence of fiscal and monetary policies in Europe?

(v) Is German hegemony a good or a bad thing?

(vi) Is coordination of fiscal policies within a European Monetary Union always a good thing when policies between Europe and the United States are not coordinated?

(vii) Does the liberalization of international markets for financial assets in Europe lead to more speculative attacks and thus hinder the process of monetary integration?

(viii) Is the loss of seigniorage revenues a persuasive argument against monetary union?

This essay on macro-economic policy coordination and monetary integration in Europe adresses most of these policy issues and also investigates the scope for international policy coordination under floating exchange rates in order to have a benchmark for comparison.

3.2 International exchange rate regimes

For analytical purposes, at least three international exchange rate regimes can be distinguished: (i) floating exchange rates; (ii) fixed exchange rates; and (iii) managed exchange rates. Floating exchange rates mean that all exchange rates adjust immediately to keep all the balances of payments in equilibrium at each point of time. This is called a 'clean float'. It means that each country has full control of its own money supply, as foreign reserves do not affect the money supply, and can therefore insulate its (long-run) inflation rate from the rest of the world.

Under fixed exchange rates each country pegs its exchange rate to the price of a reserve asset (such as the price of gold under the Gold Standard) or to the currency of a reserve-currency country (such as the US under Bretton Woods and, perhaps, such as Germany under the European Monetary System). This means that each country looses control of its money supply, because now foreign reserves are used to peg the exchange rate and these affect the money supply of the country concerned. For example, if there is a balance-of-payments deficit and thus pressure for the currency to depreciate, the central bank must defend the currency by selling foreign reserves in exchange of own currency and this reduces its money supply. Hence, under fixed exchange rates the change in the money supply is given by domestic credit expansion plus the balance of payments. There is, of course, an automatic tendency for the balance of payments to clear even under fixed exchange rates. This is called the classical specie-flow mechanism. When there is a deficit, the money supply of the country concerned falls so that aggregate demand and imports fall and therefore there is a tendency for the balance of payments to clear over time even in the absence of policy action. Also, the contraction in the money supply may lead to a rise in interest rates and an inflow of capital which helps to eliminate the deficit. Sometimes central banks do not like the inflationary consequences of a balance-of-payments surplus and therefore they sterilize the surplus with an open-market operation. In other words, the government sells bonds to the private sector and this exactly off-sets the increase in the money supply arising from the balance-of-payments surplus. Under a symmetric regime of fixed exchange rates there is an outside reserve asset and each country fixes the value of its currency vis-à-vis the reserve asset. Alternatively, there is a monetary union with irrevocably fixed exchange rates and a common central bank that determines the world money supply. It is clear that a regime of fixed exchange rates leads, at least in the long run, to a common rate of inflation for all countries.

The third regime corresponds to managed exchange rates. The European Monetary System with periodic realignments of the currency is an example of such a regime. The balance of payments is not in equilibrium all the time and exchange rates are not irrevocably fixed, so that one could also sometimes refer to such a regime as a 'dirty float'.

3.3 Analysis of floating exchange rates

3.3.1 The recent era of floating exchange rates

In the late sixties and early seventies Bretton Woods (see Section 3.4.2) fell apart and an era of floating exchange rates commenced (see Tew (1988) for a detailed historical and institutional account of this period). The end of Bretton Woods was mainly a result of the breakdown of the Smithsonian agreement to correct the US trade deficit by a devaluation of the dollar. Under a 'clean float' the balance of payments of each country is always in equilibrium and no country has an exclusive right to issue international currency. Hence, the demand for international currencies by central banks is minimal and there is no longer any conflict over the asymmetric distribution of seigniorage gains (even though each central bank can extract some seigniorage revenues from the demand for their own national currency). Each central bank can conduct a more or less independent monetary policy and eventually insulate its inflation rate from inflation in other countries, which is at the expense of more exchange rate volatility. In practice, the recent era of floating exchange rates more closely resembles a 'managed float' than a 'clean float' as can be seen from the huge interventions by the national central banks. This can also be seen from the coordinated fall in the dollar subsequent to the New York Plaza Summit in September 1985. The era of coordinated exchange rate management has been continued with the Tokyo Summit in May 1986, the Louvre Accord in February 1987 and the Venice Summit of June 1987. The Louvre Accord saw imbalances in current accounts arising from imbalances in fiscal policies, so it promised coordinated exchange rate management, unfortunately, without monetary consensus (PPC, 1988)

3.3.2 International coordination of monetary policies

One would think that under a clean float there is no need for individual governments to coordinate their monetary policies, because each country has equilibrium in the balance of payments and can conduct an independent monetary policy in the sense that its inflation rate is given by its excess rate of growth in domestic credit expansion. However, this view is fallacious as it only holds in an ideal world which is not plagued by an inadequate level of capital accumulation and by wide-spread unemployment.

Let us first concentrate on the international aspects of capital accumulation and aggregate supply under a clean float (see Van der Ploeg, 1987b). Because financial markets in the world economy are nowadays highly integrated, international movements in bonds ensure that the real returns on home and foreign bonds are arbitraged away and that we can talk of a common world real interest rate. This leads to the interdependent Mundell-Tobin effect, which says that an increase in home monetary growth leads to an equal increase in home inflation, a less than proportionate increase in the home nominal interest rate, a fall in the world real interest rate and thus to an increase in investment and capital accumulation throughout the world. The policy dilemma for each central bank is that a low monetary growth is desirable for it means low inflation whilst a high monetary growth is desirable for it means a high capital stock. A cut in monetary growth is a beggar-thy-neighbour policy, because it raises the world real interest rate and thus depresses capital accumulation abroad without affecting inflation abroad. It follows that lack of international policy coordination leads to a stale-mate, because none of the central banks wants to carry

the full burden of higher inflation associated with doing the public good of reducing the world real interest rate and boosting world activity. In other words, the positive externality associated with an increase in inflation is not internalized. Hence, non-cooperation leads to too low inflation rates, excessive real interest rates and too low levels of activity throughout the world. One of the advantages of a regime of fixed exchange rates, or a monetary union, is that such an international coordination problem cannot occur, because then there is a common inflation rate throughout the world and thus the costs as well as the benefits of reducing the world real interest rate are shared by all the countries concerned.

Let us now concentrate our attention on the international aspects of the shorter run problem of unemployment, aggregate demand and the real exchange rate. We will assume that rigid and too high nominal wages combined with a lack of effective demand are the main causes of unemployment. The standard Mundell-Fleming model with perfect capital mobility, labour immobility and imperfect substitution between home and foreign goods is then applicable. A monetary expansion at home boosts aggregate demand and employment and exerts a downward pressure on home interest rates. This leads to incipient capital outflows, which are choked off by a depreciation of the real exchange rate. This boosts net exports of the home country, so that the effects of home monetary expansion on home employment and output are magnified and on foreign employment and output are negative. Hence, in contrast to before, a monetary expansion is a beggar-thy-neighbour policy as far as employment and output is concerned. Since a monetary expansion is associated with a depreciation of the exchange rate, it leads to an increase in the cost of living at home and a fall in the cost of living abroad. Hence, as far as inflation is concerned, a monetary expansion has a beneficial effect abroad. It will be assumed that each country wishes on the one hand to reduce unemployment and on the other hand to decrease inflation in the cost of living. It then follows that in the absence of international policy coordination each country has a too tight monetary stance leading to unemployment throughout the world, effectively because each central bank attempts to export inflation abroad by appreciating its exchange rate. Coordination realizes that such competitive appreciations are futile and thus leads to looser monetary policies which achieve full employment (also see Oudiz and Sachs, 1984; Canzoneri and Henderson, 1987). In the seventies inflation was a serious problem throughout the Western world and, not surprisingly, many central banks engaged in monetary disinflation (witness the Medium Term Financial Strategy announced by Mrs. Thatcher in 1979). One finds that lack of coordination leads to excessively fast disinflation, because the adverse effects of foreign inflation are not internalized (see the papers by Oudiz and Sachs and by others in Buiter and Marston, 1985). One of the main advantages of a regime of fixed exchange rates or, even better, of a monetary union, as far as macro-economic policy is concerned, is that international conflicts about the exchange rate and exporting inflation are avoided. In other words, fixing exchange rates may be viewed as a (partial) substitute for international policy coordination. Naturally, when all markets clear or when wages are fully indexed to the cost of living, monetary policy has no real effects and thus there is no need for international policy coordination even under a clean float.

3.3.3 International coordination of fiscal policies

Let us now continue with the international aspects of fiscal policy and the short-run problem of fighting unemployment in an interdependent world with floating exchange rates. Within the same Mundell-Fleming framework used above, it is well-known that a bond-financed fiscal expansion (an increase in government spending or a cut in taxes) is a locomotive policy. The reason is that a fiscal expansion leads to an initial boost of employment and output and to an upward pressure on interest rates. The incipient capital inflows lead to an appreciation of the exchange rate, which leads to a fall in net exports and thus

some crowding out of the initial gains in employment and output and to a fall in the cost of living. As far as abroad is concerned, there is a boost in activity (despite the fall in consumption and investment arising from a higher interest rate) and an increase in the cost of living. The policy dilemma of each government is that they want a high level of government spending in order to reach full employment, boost real income and cut the cost of living, but that they want a low level of government spending in order to achieve budgetary balance for sound reasons of public finance. It follows that a right-wing Treasury responds to a fiscal contraction abroad with a fiscal contraction whilst a left-wing Treasury responds with a fiscal expansion. The reason is that a foreign fiscal contraction increases unemployment and reduces real income and the cost of living; a right-wing (left-wing) Treasury cares relatively more about the cost of living (unemployment) and thus dampens (boosts) demand. It follows that, in the absence of international policy coordination, right-wing (left-wing) Treasuries tend to have a too loose (too tight) fiscal stance relatively to the cooperative outcome and therefore end up with excessively large levels of employment and output and too high rates of interest (end up with unemployment). The reason is that right-wing (left-wing) governments do not internalize the adverse effects of a fiscal expansion on the foreign cost of living (the beneficial effects on foreign employment). International policy coordination would thus lead to right-wing (left-wing) governments to tighten (loosen) their fiscal stance.

3.3.4 Expectations, credibility and counterproductive policy coordination

Most policymakers and economists are of the opinion that international policy coordination is never a bad thing. However, this view is fallacious as it is easy to think of cases where coordination worsens welfare. One of the main reasons is that international policy coordination can worsen the credibility problems of the central banks vis-à-vis private sector agents and can therefore be counterproductive. This paradox easily arises within the context of a Keynesian multi-country model with short-run nominal wage rigidity and exchange rate expectations (Rogoff, 1985). Central banks have an incentive to renege on previously announced plans by imposing an unanticipated increase in the money supply, because this leads to higher prices, erodes the real value of the predetermined nominal wage and thus boosts employment and output. Under non-cooperation there is a disincentive to renege, because the associated depreciation of the exchange rate leads to inflation costs which do not occur under international policy coordination. Hence, international policy coordination destroys the incentive to renege, i.e., the discipline device of central banks, and thus leads to higher inflation and lower welfare for all countries concerned. Another way of looking at this paradox is that there are really three players, viz. the central banks at home and abroad and the private sector, and that a coalition among a sub-set of two players, the two central banks, can worsen the game with the third player, the private sector.

This paradox does not only arise in a world plagued by short-run unemployment, but also occurs in a long-run world with full employment and clearing of all markets (Van der Ploeg, 1988). The time inconsistency now has a public-finance interpretation, because governments may levy a surprise inflation tax and use the seigniorage revenues to cut distortionary taxes and raise spending on public goods. The first-best optimum serves as a benchmark and is characterised by (i) a unit marginal rate of substitution between home and foreign consumption of home, public and foreign goods, (ii) zero tax distortions, and (iii) Friedman's Optimum Quantity of Money, but cannot be attained in market economies. Credibility problems arise in market economies, because the price level depends on expectations about future monetary policy. The rationale behind the incentive to renege and to implement a surprise inflation tax is that the increase in seigniorage revenues permits a cut in distortionary taxes, leading to more employment, and an increase in government spending, both of

which increase welfare. The time inconsistency arises despite the fact that public and private preferences coincide. An increase in the home tax rate or level of public spending leads to a trade surplus, which is choked off by an appreciation of the real exchange rate. This reduces foreign consumption of home goods and thus worsens foreign welfare. This externality is not internalized when there is a lack of international policy coordination, hence there will be distortionary taxes and thus employment and consumption will be less and public spending will be higher than in the cooperative outcome. However, holdings of real money balances will be higher because there are less credibility problems associated with the levy of surprise inflation taxes under international policy coordination. The reason that international coordination leads to higher inflation and lower money balances is that cooperation destroys a discipline device as the exchange rate is unaffected. Hence, international policy coordination is counterproductive when the adverse welfare effects of excessive monetary growth outweigh the beneficial welfare effects of no tax distortions and optimal provision of public goods.

The point of the above discussion is that international policy coordination can be counterproductive, because it increases the incentive to levy unanticipated inflation taxes. However, a European Monetary Union with irrevocably fixed intra-European exchange rates, and to a lesser extent the European Monetary System, avoids these credibility problems altogether and this is indeed an attraction of such a system. A disadvantage of European Monetary Union is that the scope for seigniorage revenues is much less, so that the public-finance case for international policy coordination becomes more relevant.

3.4 Analysis of managed exchange rates under hegemony

3.4.1 The Gold Standard

This exchange rate regime was applicable before World War I. Each country pegs its currency to the price of gold, so that the classical specie-flow mechanism eventually restores equilibrium in the balance of payments. A deficit implies an outflow of gold, which leads to a contraction in the domestic money supply and thus to a fall in income and the price level. This cuts imports and restores equilibrium. Similarly, a surplus on the balance of payments leads to an inflow of gold, which increases domestic income, prices and imports. A return to the gold standard implies the removal of national currencies as international mediums of exchange. Although one would expect such a return to the gold standard to improve credibility, to remove the incentive to levy inflation taxes and thus to reduce world inflation, this may not be the case. The point is that the price of gold and thus world inflation would rise as the demand for gold increases. This also leads to capital gains for the main gold-producing countries, South Africa and the USSR, and for countries holding large stocks of gold. When discussing the benefits and costs to the United States of a return to the gold standard, one needs to compare the capital gains on holding gold with the loss in seigniorage revenues (Hamada, 1985, Chapter 2).

In theory the Gold Standard operated as a symmetric system with fixed exchange rates and monetary expansion in each country being fixed by the rate of gold mining. In practice, the Gold Standard operated from 1870-1914 as an asymmetric system with UK hegemony in the sense that the UK effectively determined world interest rates.

3.4.2 The Bretton-Woodssystem

The numeraire of Bretton Woods was gold, so that in principle all currencies had a given price in terms of units of gold. This means that by changing the gold prices of the various currencies one could affect all the countries' exchange rates in an independent fashion. However, the dollar price of gold has very

much been fixed throughout the Bretton Woods period (1945-1968) and indeed a fixed dollar price of gold has been regarded as the foundation of Bretton Woods. Many of the countries other than the US have changed from time to time their currency price of gold and thus their dollar exchange rate during the Bretton Woods period. For example, one can think of the revaluation of the Deutschmark and Dutch guilder in 1961 and of the devaluation of the UK pound in 1967. Bretton Woods can be regarded as an asymmetric system of fixed (but from time to time adjustable) exchange rates where the US performs the role of the reserve-currency country. In other words, Bretton Woods is characterised by a US hegemony. This means, as far as the European economies are concerned, that any devaluation of the dollar, i.e. increase in the dollar price of gold, would be matched immediately by an equal percentage devaluation of all European currencies, i.e. by equal percentage increases in the European currencies' prices of gold.

Bretton Woods operated both as a gold standard and as a dollar standard in the sense that the dollar was used to settle international transactions. Because the United States was the only country to issue international currency, it occupied a special position under Bretton Woods. This meant that under Bretton Woods the United States benefited from the right to print money and raise seigniorage revenues. Similarly, the United States was able to finance its deficits on the current account of the balance of payments by printing money and in this way was able to obtain a real transfer of purchasing power from abroad. However, the United States being the reserve-currency country under Bretton Woods was obliged to hold a substantial stock of gold and to maintain the value of the dollar. This limited the scope of monetary policy. In addition, the United States probably only gained the normal return for its services of short-term borrowing and long-term lending to the rest of the world. In that sense, the United States could be considered as an international financial intermediary or world banker and probably was not able to extract that many seigniorage revenues. Of course, the United States could with an expansionary monetary policy increase world inflation and thus extract an inflation tax from the rest of the world through unanticipated losses in the real purchasing power of dollar-denominated assets held by the rest of the world.

In 1968 the gold pool was abandoned, so that Bretton Woods operated as a straightforward dollar standard.

3.4.3 The European Monetary System

The dollar floated freely after Bretton Woods until the start of coordinated exchange rate management in 1985 and rose by about 50% in effective terms over a period of five years. This put a lot of strain on intra-European exchange rates, so the European Monetary System was founded in 1979 (Ludlow, 1982) in order to attempt to stabilize intra-European exchange rates by agreeing on central rates in terms of a composite European currency, called the Ecu, and on bands of fluctuation of 2¼% (and 6% at times for Italy). There have been about a dozen realignments since the start of the European Monetary System; the Deutschmark and the Dutch guilder have become stronger whilst the Italian lira has become weaker. In theory the European Monetary System was designed to be symmetrical with a 'divergence indicator' created specifically for this purpose. However, in practice the European Monetary System has very much operated as an asymmetric exchange rate system characterised by German hegemony (see Giavazzi and Giovannini, 1989). To be precise, Germany was able to set monetary policy for Europe as a whole whilst the other European countries pegged their exchange rates to the Deutschmark and the European Monetary System can (like the 'snake') be seen as a greater Deutschmark zone. The incentives for Germany of such an asymmetric arrangement are (i) prestige, (ii) an independent domestic monetary policy, (iii) an ability to shift the burden of increasing its fiscal stance and of increasing employment and

output throughout Europe to the other European countries, and (iv) an ability to gradually improve competitiveness (see Melitz, 1988b). The incentive for the other European economies is that, by pegging their exchange rate to the Deutschmark and giving up an independent monetary policy, they 'buy' the credibility of the Bundesbank and thus obtain a lower inflation rate than they would have done otherwise (Giavazzi and Pagano, 1986; Melitz, 1987, 1988b). The point is that, if central banks face a credibility problem vis-à-vis their private sector, they may announce a tight monetary policy in order to induce workers to settle for low wages, but once workers are locked into their contracts it pays to renege and have a loose monetary policy. When countries can credibly peg their exchange rate to the Deutschmark, they avoid such credibility problems and therefore obtain a lower inflation rate. Germany is, of course, assumed to have a larger aversion to inflation than the rest of Europe and/or have a more credible or conservative central bank. However, it should be pointed out that, unless exchange rates are irrevocably fixed, countries other than Germany still have an incentive to engage in a surprise devaluation vis-à-vis the Deutschmark (Horn and Persson, 1988).

Capital controls offered, mainly, France and Italy, the opportunity to peg their exchange rate without giving up their freedom to set domestic interest rates, but capital controls may be difficult to enforce and have also other costs. Capital controls have also been used by France and, particularly, by Italy to attempt to prevent speculative attacks on their currency when the public anticipates a devaluation. Belgium obtained a stable exchange rate as well as some financial autonomy by having dual exchange rates, that is one fixed exchange rate for international trade in goods and services and another floating exchange rate for international trade in financial assets. However, such a dual exchange rate system only works within limited bands.

The European economies have agreed to abolish all restrictions on movements of financial assets within Europe, but it is not clear that this will be feasible as long as full monetary union is not achieved. The point is that capital controls have been used to prevent balance-of-payments crises and speculative attacks on the currency. For example, if it is anticipated that the lira will be devalued, then before this occurs foreign reserves of the Banca de Italia will be bought up and liras will be sold in order to avoid a capital loss. Italy can use capital controls to fend off such an attack. Unless Europe moves from a system of managed exchange rates to a system of irrevocably fixed exchange rates (as would be the case under a European Monetary Union) governments may be tempted to use capital controls.

Dornbusch (1987) has criticized three elements, related to the desirability and feasibility of a high degree of nominal exchange rate rigidity in Europe, of the European Monetary System. Firstly, he sees no need why inflation rates in southern Europe should have to converge to the near-zero inflation rate reached in Germany, particularly as this would result in a problem about the sustainability of public debt. This concern is quite separate from the bad effects on unemployment. Secondly, he is concerned about the aim of full liberalization of international movement in financial assets without more flexibility in the (dual) exchange rate for financial transactions. Thirdly, the dollar may have to fall a further 20-30% before global imbalances in current accounts are removed and he feels this may strain the cohesiveness of the EMS currencies. This leads Dornbusch to advocate a 'crawling peg' with frequent realignments between the northern and southern currencies of Europe in order to stabilize competitiveness for the 'commercial' exchange rate, whilst the exchange rate for financial transactions would float and not be restricted by intervention limits. He may be right in that this may increase the chances of widening exchange rate management in Europe.

3.4.4 German hegemony and coordination of monetary policies

The European Monetary System effectively operates as a greater Deutschmark zone. This implies that the Bundesbank chooses the money supply whilst the other central banks of Europe peg their exchange rates to the Deutschmark and effectively have very little control of their money supplies. For example, if the Netherlands have a balance-of-payments deficit, there is pressure on the guilder to depreciate so that De Nederlandsche Bank sells foreign reserves and buys up guilders in order to defend the guilder and to meet the demand from importers. It follows that, as long as there is no sterilization (a purchase of bonds by De Nederlandsche Bank), the Dutch money supply falls to the extent of the balance-of-payments deficit and thus has become endogeneous. Hence, it is very difficult for De Nederlandsche Bank to conduct an independent monetary policy from the Bundesbank. The macro-economic trade-offs and international spill-over effects for unemployment are very different under managed rather than under floating exchange rates. An increase in the German money supply leads to equal increases in the money supplies of the other European countries and thus to a greater fall in interest rates. The reason is that the non-German central banks are defending themselves against an appreciating currency by buying up foreign reserves and selling their own currency. Since the fixed intra-European exchange rate implies that there is no net effect on net exports arising from changes in relative prices, it is clear that employment throughout Europe increases due to the increase in consumption and investment arising from lower interest rates in Europe. Hence, a monetary expansion in Germany is, as far as employment and output is concerned, a locomotive (rather than a beggar-thy-neighbour as in Section 3.3.2) policy.

A devaluation of a non-Germany currency improves net exports to Germany and thus boosts non-German employment and output and depresses German employment and output, so that from this point of view it is a beggar-thy-neighbour policy. The associated incipient fall in German money demand is choked off by a fall in interest rates, which increases non-German money demand in line with the non-German money supply. Since the European supply of money increases, the increase in non-German output outweighs the fall in German output. In addition, the non-German cost of living increases whilst the German cost of living falls as a result of the devaluation.

Let us now consider the conflict between the Bundesbank which sets the German money supply to maximize German welfare and the central banks of the rest of Europe which set the intra-European exchange rates in order to maximize their welfare [1]. As before, welfare depends on unemployment and real income or the cost of living. When the non-German central banks devalue their currency, they cause unemployment in Germany and thus the Bundesbank reacts with a monetary expansion. When the Bundesbank expands its money supply, employment and output in the rest of Europe increase and thus the rest of Europe can afford to pay more attention to their cost-of-living target and therefore the rest of Europe revalue their currencies vis-à-vis the Deutschmark. It follows that, in the absence of international policy coordination, the non-German economies use a real appreciation to disinflate away the adverse consequences of a European supply shock whilst the Bundesbank expands its money supply by more than the rest of Europe. Money supplies throughout Europe are too tight relative to the cooperative outcome. Germany achieves full employment and experiences an increase in the cost of living whilst the rest of Europe reduces its cost of living and does not achieve full employment. The rest of Europe achieves a smaller welfare loss than Germany, so the exchange rate realignment allows the rest of Europe to reduce the damage to its welfare at the expense of Germany. International policy coordination leaves real incomes and the cost of living unaffected, but the equal increase in German and other money supplies achieve full employment throughout Europe. Germany benefits from coordination whilst the rest of Europe does

worse under coordination. Hence, coordination of monetary policies leads to fixed exchange rates and therefore facilitates the move towards European Monetary Union. Alternatively, irrevocably fixed exchange rates alleviate the need for coordination as beggar-thy-neighbour policies are ruled out by construction. Another lesson from the above discussion is that in a non-cooperative regime of managed exchange rates there is every reason to realign the exchange rate even when identical countries are hit by identical shocks and have identical structures. Hence, the view that completion of a common market for Europe ('1992' and all that) might lead to homogeneous structures and thus by itself create a lasting monetary union is fallacious. However, if in addition monetary policies are coordinated, then this facilitates the movements of Europe towards an optimal currency area. A corollary is that German leadership in the European Monetary System is no substitute for cooperation in Europe.

3.4.5 Coordination of fiscal policies and the European Monetary System

Let us now consider the coordination of fiscal policies in Europe when the Bundesbank ensures a stable German money supply and the other central banks ensure fixed intra-European exchange rates and when there is unrestricted mobility of financial assets within Europe. The first point is that a unilateral fiscal expansion does not affect the intra-European exchange rate and thus does not affect real income and the cost of living in this way. This is an important reason why a system of managed exchange rates may be superior to a clean float, for competitive appreciations are avoided. A joint fiscal expansion has similar effects as under a clean float. A fiscal expansion outside Germany is a locomotive policy, because it boosts German employment and output. The reason is that the greater increase in income for the rest of Europe than in German income increases net exports of Germany. The resulting excess demand for money in Germany is choked off by a rise in German and thus European interest rates, which cause some crowding out of private consumption and investment throughout Europe. The excess demand for goods in the rest of Europe is accommodated by an increase in their money supply (whilst the German money supply remains fixed) rather than by an appreciation of the exchange rate as under a clean float. A German fiscal expansion, however, has ambiguous effects on employment and output in the rest of Europe. The reason is that on the one hand there is upward pressure on the Deutschmark and thus a fall in the money supplies elsewhere in Europe, because the other central banks have to prevent their currencies from depreciating. Hence, European interest rates rise and employment and output in the rest of Europe fall. On the other hand, the increase in net imports of Germany boosts employment and output in the rest of Europe. Obviously, German fiscal policy is less powerful for fighting German unemployment than, say, French fiscal policy is for fighting French unemployment.

Since the cost of living cannot be affected that much by fiscal policy, welfare depends on the extent to which full employment and budgetary balance are achieved (and the distinction between left-wing and right-wing governments is irrelevant). Since a fiscal expansion in the rest of Europe always cuts German unemployment, Germany can afford to pay more attention to budgetary balance and responds with a fiscal contraction. When a German fiscal expansion is a beggar-thy-neighbour (locomotive) policy, the rest of Europe responds with a fiscal expansion (contraction). When a German fiscal expansion is a locomotive policy, it is easily established that absence of European coordination leads to a too tight fiscal stance throughout Europe. However, if a German fiscal expansion is a beggar-thy-neighbour policy, then usually the German fiscal stance will be too loose whilst the other fiscal stances will be too tight. The reason is that, in the absence of coordination, Germany ignores the adverse consequences of a loose fiscal stance on the rest of Europe and the rest of Europe ignores the beneficial effects of a loose fiscal stance on Germany. In fact, both

under a cooperative and under a non-cooperative European Monetary System Germany has a tighter fiscal stance than the rest of Europe and thus does not carry its full burden of fighting unemployment. The reason is, of course, that a German fiscal expansion is less of a locomotive policy than a fiscal expansion elsewhere in Europe. Hence, if German hegemony in monetary policy is maintained, then this automatically leads to German hegemony in fiscal policies. This is why Germany cannot be relied upon to be the 'locomotive engine of growth' that pulls Europe out of a recession.

Nevertheless, the European Monetary System may be preferable to a clean float as it avoids competitive appreciations and international conflict over real incomes. This is why the European Monetary System has a built-in deflationary bias and why absence of coordination may lead to too tight fiscal policies (rather than too loose fiscal policies for right-wing governments under a clean float). A typical welfare ranking in decreasing order is EMS with coordination, a clean float with coordination, EMS without coordination and a float without coordination.

3.5 Analysis of symmetric regimes of fixed and managed exchange rates

3.5.1 Towards full monetary union in Europe

One of the main policy issues for Europe during the remainder of this century is whether the process of monetary integration should lead to a single-currency area with irrevocably, fixed intra-European exchange rates or not. The process of monetary unification probably proceeds through the following steps. Firstly, the intra-European exchange rates remain within narrow and vanishing bounds and there are no common reserves and no European Central Bank. Secondly, monetary policies of the various European central banks are coordinated in order to eliminate balance-of-payments disequilibria. Thirdly, a common reserve asset (such as the dollar used by the European economies) is used in a clearing mechanism for disequilibria in the balances of payments. Fourthly, establishment of public confidence in the irrevocable nature of fixed exchange rates. Fifthly, circulation of a common European currency (called the Monet, say) issued by a European Central Bank. The European Monetary System has gone some way towards proceeding through the first three stages. Full monetary union in Europe would also require Europe to proceed towards stages four and five. The main benefits from monetary union are: (i) elimination of uncertainty about exchange rate fluctuations; (ii) more economic use of international reserves for Europe as a whole; (iii) benefits accruing due to the shock-absorbing nature of international reserves; (iv) elimination of the international conflict associated with competitive appreciations in order to export inflation (see Section 3.5.5); (v) increase in prestige for smaller countries, but loss of prestige or sovereignty of larger countries such as the United Kingdom; and (vi) savings of the transaction costs of converting one member currency for another member currency, necessary for international trade. Hamada (1985, Chapter 3) points out that most of these benefits show non-rivalry in consumption, as for public goods, but do not show non-exclusion. However, benefits (i) and (vi) are probably most important, and, as they are related to the function of money as a unit of account, a medium of exchange and a store of value, they make monetary union a public good. Without the confidence of all member countries, a common European currency cannot develop. The costs of monetary union are mainly national, because each country gives up an independent monetary policy. Hamada (1985, Chapter 3) argues that, as the advantages of monetary union are public goods whilst the costs are more like private goods, the calculus of participation is applicable. There is a timing problem in the process towards monetary union in Europe. Increased integration of the markets for goods and factors of production ('1992' and all that) increases the costs, of adjusting output for balance-of-payments reasons, of monetary union. Hence, the

completion of a European Common Market facilitates the move towards monetary union in Europe.

The calculus of participation (Hamada, 1985, Chapter 3) argues that an individual country will join a European Monetary Union when the benefits from participation (such as from the reduction in exchange rate uncertainty, the increase in bargaining power as a group, and the use of a common currency) exceed the costs (such as giving up an independent monetary policy). However, as the benefits display a public-good character, the amount of collective action will be less than optimal because the beneficial effects on other countries are not internalized. This problem is more severe for large than for small groups of countries. Also, smaller countries can more easily be 'free riders'. Hence, the process towards full monetary union in Europe is easier when fewer countries in Europe participate and the impetus has to come mainly from the larger European countries. It is worthwile to point out that the use of side-payments, for example a concession in agricultural policies in favour of new members, may lead to an optimal size of the exchange rate union. The timing of costs and benefits further changes the process of full monetary union in Europe.

Hamada (1985, Chapter 3) also gives a number of historical examples of monetary unification, which show that a monetary union is almost never achieved before political unification is achieved. In other words, unless the European Community moves towards political integration (the United States of Europe feared by Mrs. Thatcher), there is not much chance of achieving full monetary union in Europe. The historical evidence derives mainly from the formation process of nation-states such as Germany, Italy and Japan, because there the problem arose from unification of currencies issued by local provinces. The Zoll-Verein led by Prussia gave rise to economic unification and to a fixing of the parities of the currencies of the southern states at the Munich Convention in 1837 and of the northern states at the Dresden Convention in 1838. When the second German Reich was founded in 1871, there were 7 separate currency areas, based on silver, and thirty-three independent and unconnected banks of issue. In 1871 the mark was adopted as a currency unit, in 1873 there was a law to establish a gold standard and in 1875 the Prussian Bank became the Reichsbank, but not until 1935 did the Reichsbank obtain a monopoly in the right of issue. The most spectacular example is provided by Japan. In 1871 there were 244 provinces issuing nearly 1700 types of local notes, but after the Meiji Restoration the yen became the new currency unit and from 1872 to 1879 outstanding local notes were redeemed and in 1899 the right of issue of yen was concentrated in the Bank of Japan. Several examples of monetary unifications across national borders in the nineteenth century exist; for example, the Latin Monetary Union and the Scandinavian Monetary Union between Sweden, Denmark and Norway. Most of the historical experience suggests that political unification always preceded monetary unification whilst it sometimes preceded and sometimes followed economic integration. The main lesson for Europe seems nevertheless that the completion of the European Common Market and the fact that more decisions are being made by the European Community rather than by national governments facilitates and speeds up the process towards full monetary union in Europe.

The 'All Saints' Day Manifesto for European Monetary Union' (The Economist, 1 November 1975) was the first serious case for monetary unification in Europe. This year the Delors Committee will report on the desirability of a establishing a European Central Bank. In the mean time, the pressure from politicians and the European business community to have one European currency is building up. For example, C. van der Klugt, who is chairman of Philips and of the Society for European Monetary Union (consisting of over 150 firms), argued on 18 January 1989 that one European currency would give rise to between three and five million new jobs. Among a survey of 1000 European

businessmen 860 were in favour of one European currency and a European Central Bank (not unlike the Federal Reserve in the United States). Of the European political leaders only Mrs. Thatcher seems to be against, but the British business community seems to be mostly in favour. Italy is in favour, but only as long as the new European Central Bank is not going to be dominated by Germany (as in the European Monetary System). Many people in Europe may be against a common European currency for sentimental reasons, but there is no reason at all why a new European currency (say, the Monet) should not co-exist along the existing national currencies of Europe (after all, Scottish bank notes still circulate in the UK).

3.5.2 McKinnon's proposal for Europe

Centralized money issue by an international organization has been an important feature of many plans (witness the Keynes plan or the Triffin plan), because they increase international liquidity without worsening the credibility and confidence problems associated with the use of national currencies as international currencies and because they eliminate the asymmetry between reserve-currency countries and non-reserve-currency countries. For example, the Special Drawing Rights issued by the International Monetary Fund serve as a reserve currency and as a means of payments in international transactions. The Monetary Fund attempts to replace the dollar with Special Drawing Rights, but it will be considerable time before the substitution accounts can serve as a world currency.

In the absence of such an international currency issued by an international organization such as the International Monetary Fund, some argue that it is a good idea to coordinate monetary policies in such a way as to achieve a desired growth in world money income. This would mean that the international monetary system would operate as a symmetric rather than as an asymmetric exchange rate system with US hegemony. The main advocate of a return to fixed nominal exchange rates, at least between the United States, Japan and Germany, is McKinnon (1986), who suggests it must be combined with setting domestic monetary growth rates and symmetrical non-sterilized intervention in such a way as to achieve a desired growth in the aggregate nominal money stock. Given that financial markets throughout the world are highly integrated and that McKinnon's proposal implies fixed exchange rates, inflation rates and real interest rates are equalized throughout the world. This means that the global interest rate can effectively be used to control growth in the aggregate price level, which corresponds to a given aggregate money stock.

McKinnon's proposal reflects the view that currency substitution was the main cause of variations in velocity and of exchange rate fluctuations, because with this proposal they would cancel out at the global level. More recently, the money supply has been replaced by the aggregate price level as a target variable or by commodity prices as forward-looking indicators.

As far as the proposals for monetary integration in Europe are concerned, it is clear that before one moves to a full monetary union in Europe one could attempt to implement a variant of the McKinnon proposal on a European scale. The reason is that when the McKinnon proposal is successful, it is not too different from monetary integration and therefore the political feasibility of monetary integration in Europe may be enhanced.

3.5.3 Williamson's proposal of target zones for real exchange rates adapted for Europe

When it is not feasible or not desirable to have a world with one common inflation rate, it does not seem sensible to have fixed nominal exchange rates as would be the case under a European monetary union or under McKinnon's proposal. For example, the northern European governments extract an insig-

nificant proportion of their total tax revenues from seigniorage (less than 1% for the Netherlands) whilst the southern European economies extract as much as 10% (for Greece and Portugal) of their tax revenues from seigniorage (see Giavazzi, 1989). In the world economy the Latin American countries and many other developing and high-inflation countries need to extract a much larger proportion of tax revenues from seigniorage than the US, the northern European economies and Japan. In these cases, Williamson's (1983) proposal of target zones for real exchange rates seems a very sensible idea and, indeed, this proposal has recently received a lot of attention in the press. The main reason for the popularity of Williamson's proposal is the growing dissatisfaction with the performance of floating exchange rates giving rise to exchange rate volatility and persistent and large imbalances in current accounts. The New York Plaza Agreement of September 1985 was the first step towards coordinated intervention in exchange rate markets to bring the value of the dollar down and this has been relatively successful. At the Louvre Accord in February 1987 it was agreed to manage exchange rates and the Tokyo Summit of May 1986 and the Venice Summit of June 1987 advocated a common set of 'indicators', such as inflation rates, unemployment rates, balance of payments, interest rates, etc., as a framework for international policy coordination.

The main advantage of Williamson's proposal is that it is supplemented with a set of simple rules and guidelines for the conduct of macro-economic policies in the world economy. Williamson's proposal consists of a set of mutually consistent, wide and flexible target zones for real exchange rates, to be achieved by monetary policy in the form of reaction functions for interest rates, and of national targets for nominal income, to be achieved by fiscal policies. The targets are fundamental real exchange rates, which ensure medium- to longer-run equilibrium in the current accounts. PPC (1988) provides a persuasive policy document for the adoption of target zones for real exchange rates.

Williamson's proposal should reduce volatility of real exchange rates and thus lead to less damaging effects on international trade and to a smaller vulnerability to speculative bubbles. It also means that countries are less likely to attempt to engage in competitive appreciations of the real value of their currency and thus to export inflation. Hence, Williamson's proposal internalizes the externalities associated with exporting inflation. The main objection to Williamson's proposal is that it lacks a firm anchor for inflation rates, but this task is left to individual Treasuries who use fiscal policy to control nominal income. Williamson's proposal as applied to the world economy can be summarized by the following guidelines:

(i) The use of interest-rate differentials to ensure that real exchange rates do not move to far away (say, within bands of 10%) from fundamental real exchange rates, which corresponds to a version of an old-fashioned 'crawling peg' to offset inflation differentials.

(ii) Adoption of targets for the growth of nominal income, which should equal the growth of productive potential plus a fraction of inherited inflation plus a positive function of the deflationary gap.

(iii) The use of the world interest rate to achieve the target for the growth of world nominal income.

(iv) The use of national fiscal policies to attain the targets for the growth of national nominal income.

It should be clear that, like McKinnon's proposal for the Group of Three, Williamson's proposal involves international policy coordination for the Group of Seven. However, there is no reason why Willamson's proposal should not be applied to Europe. In fact, this may be desirable in view of the fact that southern Europe has a greater need for seigniorage revenues than northern Europe. The proposal then corresponds to a crawling peg for nominal exchange rates to accommodate inflation differentials and some features of this variant have been advocated by Dornbusch (see Section 3.4.2). Williamson's proposal means

that the fiscal authorities control nominal income whilst the monetary authorities control real exchange rates.

Table 1 Alternative Exchange Rate Regimes

	Floating Exchange Rates	Fixed Exchange Rates	Managed Exchange Rates
Symmetry	National Money Supply Targets OECD 1973 85	McKinnon's Proposal for World Monetarism European Monetary Union	(i) Louvre Accord (ii) Williamson's Target Zones
Hegemony		(i) Gold Standard 1870-1914 (ii) Bretton Woods 1945-68 (iii) Dollar Standard 1968-73	EMS 1979-

Table 1 presents a useful overview of various international exchange rate regimes discussed so far (taken from PPC (1988)). It clearly shows that one should distinguish between floating, fixed and managed exchange rates as well as between symmetric and asymmetric exchange rate regimes. Both McKinnon's and Williamson's proposal are concerned with symmetric exchange rate regimes without hegemony. Williamson's proposal can be viewed as a 'soft' evolution of the European Monetary System, whilst McKinnon's proposal can be viewed as a 'hard' evolution of the European Monetary System. McKinnon's proposal has the danger of running into the problems of labour market imperfections and regional depression.

3.5.4 International coordination of monetary policies under fixed exchange rates

Under irrevocably fixed nominal exchange rates, as would be the case in a European Monetary Union, monetary policies are closely interdependent and it is important to know what incentives member countries have when they set their monetary policies in a non-cooperative or cooperative fashion. To focus our ideas we consider the long run, assume full employment and purchasing power parity, and employ the monetary approach to the balance of payments (Hamada, 1985). Within this context, it is well-known that there is a common European inflation rate given by the weighted average of the access growth rates in the supply of domestic credit expansion over the growth rates in real national income plus the increase in international reserves (as a ratio of the European money supply). In addition, a balance-of-payments surplus of a country occurs when its demand for money exceeds its domestic supply of money and must be the other country's deficit. The balance of payments (as a ratio of the demand for money) is the difference between the common inflation rate and the own rate of excess supply of domestic credit. Hence, an expansion of domestic credit in one country leads to a balance-of-payments deficit, mirrored by surpluses elsewhere, and to higher inflation in all member states so that there are strong international spill-over effects. Each central bank chooses its domestic monetary policy to maximize its welfare, which depends on its inflation and its desired change in foreign reserves (balance of payments). It then follows that, in the absence of international policy coordination, inflation is higher

(lower) than the desired inflation when the increase in international reserves exceeds (falls short of) the weighted average of desired increases in international reserves. In other words, when the expansion of international reserves is excessive countries defend themselves against reserve accumulation by expanding domestic credit and thus raising inflation above the desired level. The corrolary is that when there is an excessive (too low) expansion of international reserves, policy coordination implies that central banks reduce (increase) their rates of expansion in domestic credit. An increase in the number of member states works, as is well-known from the theory of public choice, against the optimal supply of public goods and thus leads to a greater divergence between non-cooperative and cooperative outcomes.

The main lesson is that one should manipulate the increase in international reserves in such a way as to match the average preference for accumulating reserves. In other words, the main task of a European Central Bank must be to design the growth in the supply of European Currency Units in such a way as to ensure that the total growth in international reserves in Europe matches the average desire for accumulating reserves by the central banks of Europe.

Note that a clean float does not require international coordination of the type discussed above, because the balances of payments will always be in equilibrium and each central bank can choose its monetary policy to achieve its desired inflation rate exactly.

3.5.5 Coordination of fiscal policies under a European Monetary Union

Let us now consider the problem of unemployment and the international coordination of fiscal policies under a European Monetary Union and a European Central Bank. This implies irrevocably fixed exchange rates and thus no problems of speculative attacks and balance-of-payments crises. Since there are a lot of sentiments about national currencies, one could envisage the issue of European Currency Units as a parallel currency to the existing national currencies. There should be no German hegemony in monetary policies, so that the European Central Bank should not be dominated by the Germans and a European Monetary Union should be a symmetric system. Hence, the European money supply is set by all European central banks or, alternatively, by the European Central Bank. Obviously, if all markets cleared instantaneously, there would be no unemployment and one could reap the well-known advantages of a common currency area (Goodhart, 1988). However, if there is unemployment, wages are inflexible and the exchange rate cannot be devalued, one must rely on fiscal action to fight unemployment. Hence, in the following it is assumed that there is perfect capital mobility and unemployment caused by nominal wage rigidity.

A bond-financed fiscal expansion in one of the member states raises European interest rates and thus causes a fall in consumption and investment throughout Europe. The net effect on home employment and output is, of course, positive, but foreign employment and output can increase or decrease depending on whether the beneficial effects on net exports to the home country outweigh the adverse effects of crowding out. Hence, in a European Monetary Union a fiscal expansion can, in contrast to under a clean float, be a beggar-thy-neighbour policy. The effect of a fiscal expansion in the rest of Europe on German employment is less under a monetary union than under the EMS, but the spill-over effect of a German fiscal expansion is greater. It can easily be established that international coordination of fiscal policies in a European Monetary Union yields the same outcome as coordination under a clean float. When fiscal expansions are locomotive (beggar-thy-neighbour) policies, fiscal stances are, in the absence of international policy coordination, too tight (too loose) and unemployment too high (low). Coordination would lead each Treasury to loosen (tighten) their fiscal stance. As far as welfare is concerned, Germany does bet-

ter and the rest of Europe does worse under a cooperative European Monetary Union than under a cooperative European Monetary System. Hence, Germany has not much incentive to cooperate and give up its hegemony in monetary policy when setting up the European Central Bank. However, if the US has nominal wage rigidity and Europe has real wage rigidity, then the fiscal stance will be too tight in Europe and too loose in the US. Both factors have contributed to the rise in European unemployment.

It may be worthwhile to consider the effects of wages being fully indexed to the cost-of-living indices in Europe, which may be empirically a relevant phenomenon (e.g., Branson and Rotemberg, 1980; Bruno and Sachs, 1985). If this is the case, monetary policy is neutral and has no real effects. Hence, the particular type of exchange rate regime in force does not affect the effectiveness of fiscal policies. A fiscal expansion leads to an appreciation of the real exchange rate, which reduces relative import prices, the cost of living and thus wages and consequently unemployment falls. Abroad the opposite happens, so that a fiscal expansion is always a beggar-thy-neighbour policy. It follows that, if real wage rigidity is important, then lack of international policy coordination implies that public sector deficits are excessive as individual countries do not internalize the adverse effects on the rest of Europe.

3.5.6 Interactions between a European Monetary Union and the United States

It is instructive to also consider the interactions between a European Monetary Union and the United States, so that there is a fixed intra-European exchange rate and a floating trans-Atlantic exchange rate. We assume a stable European and a stable US money supply and focus our attention on fiscal policies in the face of wide-spread unemployment. Countries care about full employment, the cost of living and budgetary balance. Three outcomes can be considered: (i) global cooperation; (ii) cooperation within Europe and non-cooperation across the Atlantic; (iii) neither intra-European nor trans-Atlantic coordination of fiscal policies. When the European countries coordinate their fiscal policies, they can be treated as one bloc of, say, the same size as the US. The analysis is then exactly the same as under a clean float (see Section 3.3.3). Hence, right-wing governments have a too loose fiscal stance in outcome (ii) relative to outcome (i) whilst left-wing governments have a too tight fiscal stance in the absence of trans-Atlantic coordination. When governments have right-wing preferences, cooperation within Europe makes the European countries better off and the US worse off, both Europe and the US loosen their fiscal stance, and there is more over-employment in both Europe and the US. The point is that when neither the European nor the US governments cooperate, outcome (iii), the US has a looser fiscal stance than Europe and thereby is able to exploit the smaller size of the European countries by increasing the real value of the dollar and increasing its real income at the expense of real incomes in Europe. Hence, when there is global non-cooperation, the US achieves a lower welfare loss than Europe. Cooperation within Europe aggravates the trans-Atlantic attempts to appreciate the currency and export inflation, as Europe now acts as one large bloc, and therefore leads to looser fiscal stances. Since the US and Europe are now effectively of equal size, the US can no longer dump inflation on Europe and thus Europe is better off and the US worse off.

However, when governments are left-wing, these results may change dramatically. When none of the countries cooperate, the US still has a looser fiscal stance than Europe and now has a larger welfare loss than Europe because left-wing governments do not care so much about cuts in the cost of living associated with appreciations of the dollar. Since left-wing governments do not attempt so much to export inflation, cooperation within Europe does not lead to much loosening of fiscal stances. In fact, the US tightens its fiscal stance, which worsens European unemployment, and Europe loosens its fiscal stance. Cooperation within Europe alone increases real income and reduces the cost of

living, but increases unemployment. Hence, coordination of fiscal policies within a European Monetary Union can be counterproductive, especially when governments care a great deal about unemployment.

The above result is a standard proposition in game theory: a coalition among a sub-group of players can worsen the utilities of these players, because it may provoke an adverse response from the remaining players (the US). A coalition of member states in a European Monetary Union avoids the appreciation of the dollar, caused by a looser fiscal stance in the US than in Europe in a fully non-cooperative world, and thus avoids the increase in the European cost of living. This raises European welfare. However, cooperation within Europe also leads to more unemployment because the US now has a tighter fiscal stance as it no longer attempts to export inflation. Hence, when governments in Europe care a lot about unemployment, coordination of the fiscal policies of the member states of a European Monetary Union can be counterproductive.

3.6 Harmonisation, convergence and coordination of economic policy

Coordination of macro-economic policies and convergence of economic performance within Europe are stated objectives of the Treaty of Rome. The Council of Ministers made a decision in 1974 'for attainment of a high degree of convergence of economic policies of Member States', which was meant to be mainly a process of setting budgetary policy guidelines (for a discussion, see Steinherr, 1984). However, convergence of policies within the European Community does not necessarily imply international coordination of policies (and vice versa). In an interdependent system of identical economies one can converge either on a non-cooperative outcome or on a cooperative outcome. In other words, convergence itself should not be an objective of economic policy even though it seems to be a stated objective of the European Community. The final 1978 report on the European Monetary System states that 'the European Monetary System ought to contribute to reduce divergences in economic performance' and that 'the credibility of the new system depends on progressive convergence of economic performance' (see Steinherr, 1984), but again such statements say almost nothing about international policy coordination. Convergence refers to the attainment of common targets of economic policy, e.g., a reduction in inflation differentials, etc. Coordination refers to the joint and mutually consistent setting of the instruments of economic policy to maximize joint welfare of the various member states. Convergence is often used as an excuse by individual governments to implement unpopular policies, because even under coordination there is no reason for convergence when individual countries are of different size, have different social and economic structures, and are hit by different shocks. Obviously, this should be distinguished from the unrealistic case of perfect mobility of all assets, goods, capital and labour as then the market forces convergence of tax policies and of budget deficits.

International harmonisation of economic policies attempts to achieve greater unity in economic structure, to increase the scope for rules, and to reduce the scope for discretionary policy. Harmonisation is primarily concerned with long-term objectives such as efficiency and distribution, so harmonisation is more concerned with commercial policy, anti-trust law, labour law, agricultural policy, regional policy etc. rather than with discretionary macro-economic monetary and fiscal policies. Hence, harmonization within Europe is mainly concerned with promoting free competition and with efficient markets on a European level. The completion of the Common European Market and '1992' is mainly concerned with harmonization. International cooperation occurs, firstly, through the international exchange of information, secondly, through international harmonization of rules, and, thirdly, through international coordination of discretionary policies. Through the European Communi-

ty, the OECD and summit meetings there is already a great deal of exchange of information. The plans for '1992' and beyond imply a considerable amount of harmonization. The European Monetary System implies some degree of coordination of monetary policies and European Monetary Union would imply full coordination of monetary policies. The big issues in the coming years for Europe are the desirability and nature of convergence on the one hand and of coordination of fiscal policies at a community level on the other hand given the increasing degree of monetary unification in Europe.

3.7 Assessment of the case for European monetary integration

As a way of concluding this essay, we will assess the case for moving towards a European Monetary Union and the establishment of a European Central Bank.

The main advantages of more monetary integration in Europe are:

(i) The move towards a European Monetary Union is a political end in itself, because it will be part of the whole process of political unification in the European Community. However, the Prussian and the Japanese experiences in the 19th century suggest that monetary unification is always preceded by political unification.

(ii) The move towards one European currency will save an enormous amount on information and transaction costs and thus yield massive benefits, because households and firms need no longer change currency when they trade with other Europeans. In addition, there is the efficiency of a single money as unit of account and store of value.

(iii) There will be less or no intra-European exchange rate fluctuations, which reduces risk and is good for export-business. This argument relies, of course, on the absence of a complete and perfect set of forward exchange rate markets, because otherwise firms could hedge themselves against exchange rate risk.

(iv) The liberalization of international markets for financial assets in Europe means that it is difficult to fend off speculative attacks on the currency, since especially France and Italy have in the past used capital controls to avoid such attacks. Under a European Monetary Union intra-European exchange rates are irrevocably fixed, hence speculative attacks no longer occur and thus abolishing capital controls throughout Europe will be easier. For the Netherlands this argument does not apply, because they already have unrestricted capital movements across the Dutch borders. Nevertheless, monetary union in Europe would dampen some of the huge speculative flows between member states when capital markets are liberalized.

(v) A move towards irrevocably fixed exchange rates and a common monetary policy set by a European Central Bank will avoid the beggar-thy-neighbour policies of appreciations of the exchange rate in order to dump inflation on neighbouring countries. International policy coordination under a clean float also realizes that such attempts to improve real income are futile and would thus in the face of unemployment lead to looser monetary policies and more jobs. Hence, a regime of fixed exchange rates acts as a partial substitute for international policy coordination.

(vi) Under a clean float an increase in monetary growth reduces real interest rates and increases capital accumulation and activity throughout the world, hence in the absence of international policy coordination monetary growth and inflation will be too low, real interest rates too high, and activity too low as none of the central banks internalizes the beneficial effects of higher monetary growth on the rest of the world. Under a European Monetary Union such a coordination failure does not arise, because there is a common inflation rate and thus the costs as well as the benefits of reducing European real interest rates are shared by all member states. Given the apparent problem of a capital shortage in Europe, this advantage may be of some importance.

(vii) International coordination of monetary policies under a clean float destroys a discipline device of central banks and thus leads to high inflation and may be counterproductive because without coordination a surprise inflation tax leads to an unanticipated depreciation of the exchange rate and a higher cost of living which acts as a disincentive to renege. However, a European Monetary Union with irrevocably fixed intra-European exchange rates avoids such credibility problems altogether and thus leads to lower inflation rates throughout Europe.

(viii) When the member states of the European Monetary System suffer from wide-spread unemployment and do not coordinate their fiscal stances, Germany has an incentive to gain competitiveness at the expense of the rest of Europe by having a tighter fiscal stance and benefitting from the looser fiscal stances elsewhere. Under a European Monetary Union there is no German hegemony, so Germany will carry the full fiscal burden of fighting unemployment and be a 'locomotive engine of growth' for Europe.

The main disadvantages of increased monetary integration in Europe are:

(i) Some countries do not like to give up their political and economic sovereignty in monetary policy, since they have no confidence in a European Central Bank, a desire for an independent monetary policy and a deep-seated aversion to having their national powers diluted. This seems the position of Mrs. Thatcher and the United Kingdom. In order for the British, French and Italians to reap the low-inflation benefits of the Bundesbank's credibility, they would have to leave it largely untouched as an institution. However, this would be unpopular with their electorates as it would imply a loss of national sovereignty. If the United Kingdom does not participate, one could seriously question the political and economic feasibility of a European Monetary Union.

(ii) The establishment of a European Central Bank will mean a more symmetric exchange rate regime for Europe, because German hegemony in monetary policy will be replaced by all central banks having a say on how European monetary policy is conducted. France and Italy are particularly keen on this. There is a real danger that this will raise inflation in northern Europe and reduce inflation in southern Europe, because the Mediterranean countries have a larger black economy and thus a smaller tax base and a greater need for seigniorage revenues (witness the horrendous Italian problem of public debt). The convergence of inflation rates that would occur under a European Monetary Union may thus not be desirable from a public-finance point of view. Hence, one could argue for a crawling peg to accommodate inflation differentials between northern and southern Europe. (This would also avoid straining the cohesiveness of the European currencies if the dollar falls by a further 20%.) As far as the Netherlands is concerned, German hegemony in monetary policy results in lower inflation and this might favour the European Monetary System.

(iii) A European Central Bank may not be as conservative and not have the credibility, discipline and reputation of the Bundesbank, hence average European inflation will increase.

(iv) In a perfect world with no externalities and no wide-spread unemployment, the well-known advantages of a common currency area discussed above make a strong case for more monetary integration in Europe. However, when certain areas of Europe are depressed and suffer from unemployment and wages do not adjust immediately to clear all labour markets, the case for a European Monetary Union is much weaker, especially as there is little mobility of labour between the member states of Europe. In a perfect world wages in the depressed region would fall until full employment is reached and there would be no need for a realignment of exchange rates. However, when wages are for institutional or other reasons rigid, the lack of effective demand in the depressed region would induce a depreciation of the nominal exchange rate and this would eventually also cure unemployment in the depressed region. Hence, unemployment in a particular region may be more persistent under a European Monetary Union and thus this creates a greater need for stabilization and active fiscal

policy. It is of some interest to point out that Germany and the Netherlands have had the highest sacrifice ratios (unemployment years for each point reduction in inflation) in the OECD region and there is no reason to think that this will become any better under a European Monetary Union.

(v) Under a European Monetary Union it is not possible to engage in competitive appreciations of the exchange rate and this is why, in the face of wide-spread unemployment, there is a built-in deflationary bias in fiscal policies. Hence, coordination should ensure that governments expand their fiscal stances when there is unemployment.

(vi) Under fixed exchange rates disequilibria in the balance of payments take longer to disappear than under a float. The mechanism is that a surplus leads to an increase in the money supply, which boosts income and imports and thus reduces the surplus. This implies a coordination task for the European Central Bank, for it must ensure that the growth in European reserves matches the average preference for accumulating reserves.

As far as policy conclusions are concerned, increased monetary union seems, as long as governments are prepared to engage in more active fiscal policies when unemployment is wide-spread, on balance desirable for a small country such as the Netherlands. The main disadvantage may be a somewhat higher inflation rate, but this may not be too bad in view of the large public debt in the Netherlands. For Europe as a whole, it is not so clear that a European Monetary Union with irrevocably fixed exchange rates is either feasible or desirable. It may, as Rudiger Dornbusch advocates, be more sensible to have a crawling peg with frequent realignments between the northern and southern currencies of Europe in order to stabilize competitiveness of the 'commercial' exchange rate and to allow for inflation differentials, whilst a separate exchange rate for financial transactions should float and not be restricted by intervention limits. This can also include some of the features of Williamson's (rather than McKinnon's proposal), albeit with much smaller bands for real exchange rates, and may be the best way of widening exchange rate management in Europe for the next two decades. Finally, it is of the utmost importance that monetary integration must be accompanied by appropriate changes in fiscal structures in order for it to be a success.

Notes

[1] Speculative attacks can occur whenever a devaluation is anticipated. France and Italy have in the past used capital controls to avoid such attacks (witness the differential between on-shore and off-shore interest rates). Abolition of capital controls may not be feasible unless Europe moves to full monetary union with irrevocably fixed exchange rates. Nevertheless, we abstract from these issues and assume perfect capital mobility throughout Europe.

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